

## **Abstract of the Disclosure**

A xDSL modem having an adaptive compensating filter of null generated by BT (Bridged Tap) minimizes transmission errors. The VDSL having a null  
5 compensating filter comprises a null compensator for finding a null frequency generated on a transfer function of a receiving signal before the DFE by predicting and tracing the null frequency to enlarge a signal component of the null frequency. The damage of a signal component resulting from the null generated by BT on a subscriber line is previously compensated before the equalizer. As a result, degradation of transmission  
10 speed of xDSL service is prevented and the number of taps in the equalizer is reduced, thereby reducing cost in embodiment of hardware.